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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| EXAMINER |
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JUL 10 1999

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| ART UNIT | PAPER NUMBER |
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DATE MAILED:

JUL 10 1999

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/341,079

Applicant(s)

FRESCO ET AL.

Examiner

Stephen C Siu

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

## Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 17) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 16 recites "an effective amount" which is confusing because the precise amount that constitutes an "effective" amount is not clear.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

Claims 1, 14, 16 and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by Kim et al (Biochemistry, 1996 Jan 30, Vol.35, No.4, pages 1187-94).

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Kim et al (Biochemistry, 1996 Jan 30, Vol.35, No.4, pages 1187-94) teach the increase of stability of triplex DNA with 9-aminoacridine and bis-acridine (see abstract).

Claims 1, 6, 14, 16, 21 and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by Robles et al (J Am Chem Soc, 1996, Vol.118, No.24, pages 5820-5821).

Robles et al (J Am Chem Soc, 1996, Vol.118, No.24, pages 5820-5821) teach stabilization of DNA triplexes by adding ethylene glycol (see abstract).

Claims 1-2, 4-5, 14, 16-17, 19-20 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Kiyama et al (Nucleic Acids Research, 1995 Feb 11, Vol.23, No.3, pages 452-8).

Kiyama et al (Nucleic Acids Research, 1995 Feb 11, Vol.23, No.3, pages 452-8) teach the formation of triplex DNA structures and protection from degradation and stabilization of the triplexes in the presence of a cationic detergent, cetyltrimethylammonium bromide (see abstract and page 455, col.2).

Claims 1, 11-14, 16, and 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by D'Souza et al (Bioorganic and Medicinal Chemistry Letters, 1994, Vol.4, No.8, pages 965-70).

D'Souza et al (Bioorganic and Medicinal Chemistry Letters, 1994, Vol.4, No.8, pages 965-70) teach the strength of linear triple helical complexes as being enhanced

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or stabilized with ethanol, page 967, last paragraph, lines 1-8). D'Souza et al further teach the molecules as being oligonucleotides and describes their properties as consistent with their triple helical structure, thus indicating the nature of the third strand as being DNA.

Claims 1, 14-16, 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al (Biochemistry, 18 Jan 1994, Vol.33, No.2, pages 606-13).

Shimizu et al (Biochemistry, 18 Jan 1994, Vol.33, No.2, pages 606-13) teach introduction of base analogs into triplex-forming oligonucleotides and subsequent examination of stability of the triplexes. The triplexes containing the base analogs showed higher  $T_m$  values and higher stability (see abstract).

### ***Conclusion***

No claims allowed.

### ***Inquiries***

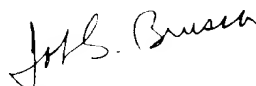
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Siu, whose telephone number is (703) 308-7522. The Examiner can normally be reached from 7:00 a.m. to 3:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Woodward, can be reached at (703) 308-4028. Papers related to this application may be submitted to Art Unit 1631 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES

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SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. The Fax number is (703) 308-0294. Please call the Examiner at (703) 308-7522 before the transmission to expedite delivery of the fax. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Stephen Siu

04/21/00



JOHN S. BRUSCA, PH.D  
PRIMARY EXAMINER